

Amendments to the Claims

Claim 1 (currently amended): An ozone processing apparatus that processes a process object by using ozone gas, comprising:

a processing part having a processing space ~~adapted~~ configured to contain a process object therein;

an ozone generator ~~adapted~~ configured to generate ozone gas from an oxygen-containing gas through an electric discharge;

an ozone supply line ~~adapted~~ provided to supply the ozone gas generated by the ozone generator into the processing space of the processing part;

a ~~first~~ steam generator ~~adapted~~ configured to generate water vapor;

a ~~first~~ steam supply line connected to the ozone supply line to supply the water vapor generated by the ~~first~~ steam generator into the ozone supply line; and

a metal trap arranged in the ozone supply line at a portion thereof downstream of a joint between the ozone supply line and the ~~first~~ steam supply line such that a mixed fluid containing the ozone gas and the water vapor is introduced into the metal trap, the metal trap containing an adsorbent composed of a silicon-containing material;

a cooler arranged in the ozone supply line at a portion thereof downstream of the metal trap to cool the mixed fluid containing the ozone gas and the water vapor having been passed through the metal trap; and

a gas-liquid separator arranged in the ozone supply line at a portion thereof downstream of the cooler to separate the ozone gas contained in the mixed fluid cooled by the cooler from condensed water generated by cooling the water vapor.

Claim 2 (original): The ozone processing apparatus according to claim 1, wherein the adsorbent is composed of pure silicon or SiO₂.

Claim 3 (original): The ozone processing apparatus according to claim 1, wherein the metal trap comprises a container containing plural chips composed of the silicon-containing material.

Claims 4-8 (canceled)

Claim 9 (currently amended): The ozone processing apparatus according to claim [[7]] 1, wherein the ~~first~~ gas-liquid separator comprises a tank holding water therein, whereby, when the condensed water and the ozone gas pass through the water in the tank, the condensed water is mixed to the water in the tank to be separated from the ozone gas.

Claim 10 (withdrawn): A method of processing a process object contained in a processing space with ozone, comprising:

- a step of generating ozone gas through an electric discharge;
- a step of mixing water vapor with the ozone gas; a step of bringing a mixed fluid containing the ozone gas and the water vapor into contact with an adsorbent composed of a silicon-containing material, thereby allowing the adsorbent to adsorb a metal contained in the ozone gas to be removed therefrom; and
- a step of supplying the ozone gas, from which the metal has been removed, into the processing space, thereby processing the process object.

Claim 11 (withdrawn): The method according to claim 10, further comprising:

- a step of cooling the mixed fluid after it contacts the adsorbent, thereby dissolving impurities contained in the ozone gas into condensed water generated by cooling the water vapor; and
- a step of separating the ozone gas from the condensed water.

Claim 12 (withdrawn): The method according to claim 10, further comprising additional steps which are performed after the step of mixing water vapor with the ozone gas and before the step of bringing the mixed fluid containing the ozone gas and the water vapor into contact with the adsorbent composed of the silicon-containing material, said additional steps including:

- a step of cooling the mixed fluid, thereby dissolving impurities contained in the ozone gas into condensed water generated by cooling the water vapor;
- a step of separating the ozone gas from the condensed water; and
- a step of mixing water vapor again with the ozone gas thus separated.

Claim 13 (withdrawn): A method of processing a process object contained in a processing space with ozone, comprising:

- a step of generating ozone gas through an electric discharge;
- a step of mixing water vapor with the ozone gas;
- a step of cooling a mixed fluid containing the ozone and the water vapor, thereby dissolving impurities contained in the ozone gas into condensed water generated by cooling the water vapor;
- a step of separating the ozone gas from the condensed water; and a step of supplying the ozone gas thus separated into the processing space, thereby processing the process object.

Claim 14 (withdrawn): The method according to claim 13, wherein the step of mixing water vapor with the ozone gas and the step of cooling the mixed fluid containing the ozone gas and the water vapor are performed repeatedly for plural times.

Claim 15 (withdrawn): The method according to claim 13, wherein the step of separating the ozone gas from the condensed water is performed by passing the ozone gas and the condensed water through water.